Cellular Approach to Multi-Domain Battlespace Management

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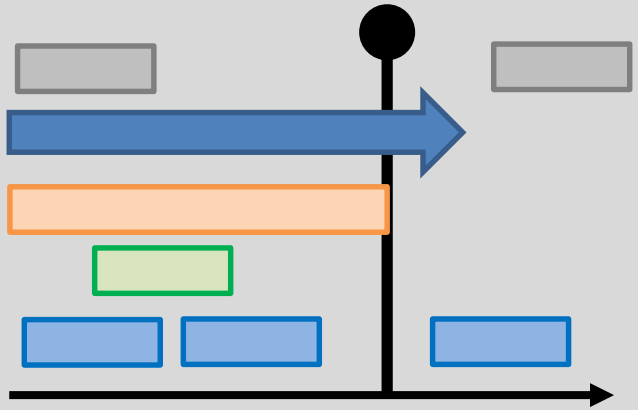
The Challenges

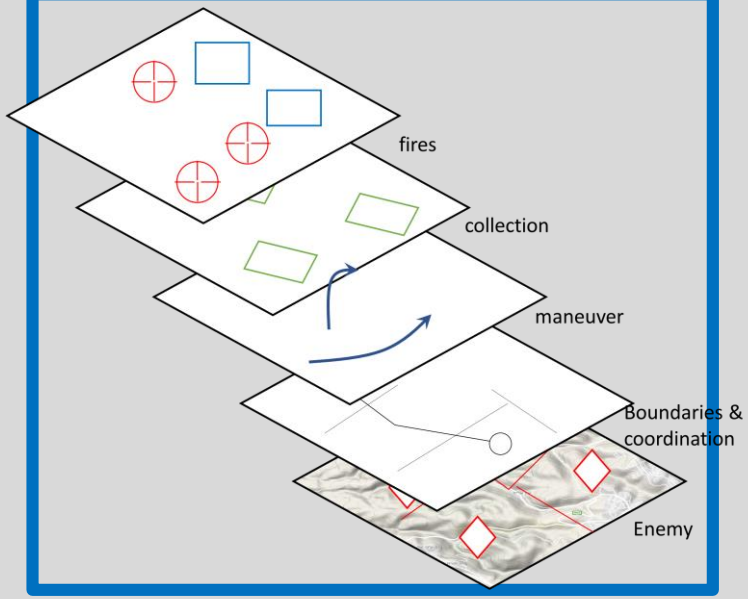
- To achieve Common Operational Picture and Shared Situation Awareness among all Combat Team members

Adversaries
"Whack a Mole"

Synchronization



Own troops
Simplification & coordination



Possible Solutions

- **Size**: Swarms of small units (lynch & Fish, 2018)
- **Technology**: Information integration, competencies (Goldfein, 2017)
- **Convergence** (TRADOC, 2017)

Mental Model

The mechanisms whereby humans generate descriptions of system purpose and form, explanations of system functioning and observed system states, and predictions of future system states

(Rouse & Morris, 1986)

Team shared Mental Model

Team construct, that represent the way team members perceive the team's mission and process, and describe reciprocity in team.

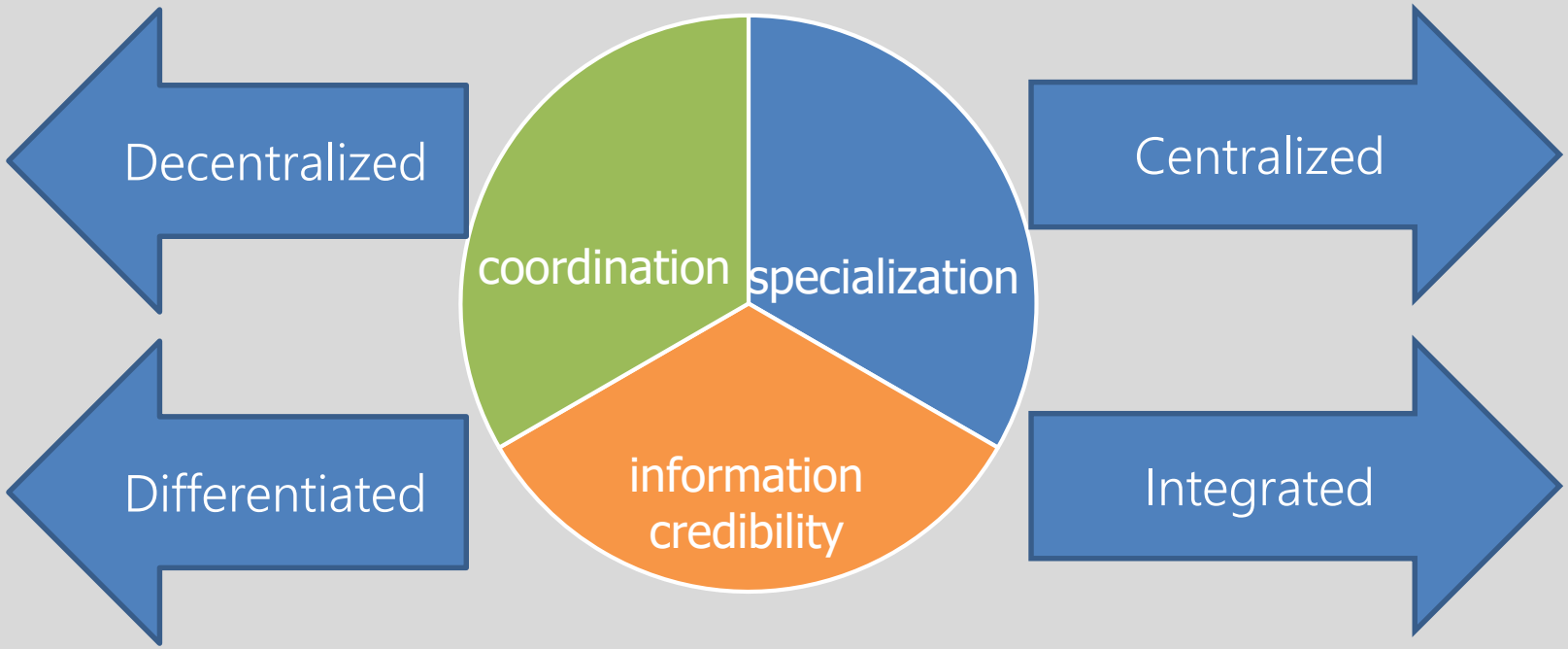
(Klimoski & Mohammed, 1994)

- "The Team's Mind"
- Might predict quality of outcome

(Mohammed et al., 2010)

Transactive memory system TMS

How team members store and encode knowledge, and retrieve knowledge items when needed (Wegner, 1985; Lewis,2003)



"Everybody knows who knows what, and how to get it"

+

"New knowledge created in interactions"

TMS for Multi-Domain Combat Team

- Division of knowledge
- Might be used in short time
- Improve knowledge transfer within the team
- Assist overcoming attention narrowing
- Develop as the team gains mutual experience
  - First - specialization
  - More credibility and coordination

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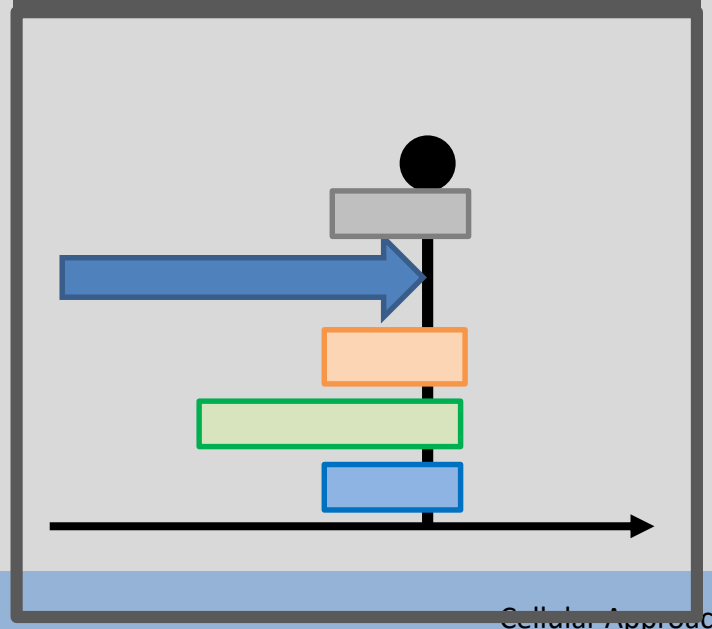
Synchronization & Coordination



1st Bn.

Headquarters

3rd Bn.

4th Bn.

HQ

Cellular Approach - Benefits

Coordination

All functions, in all domains are coordinated

- Spatially
- By mission

Simplification

- Few types of adversaries in each cell
- Maintain superiority of own troops over the adversary

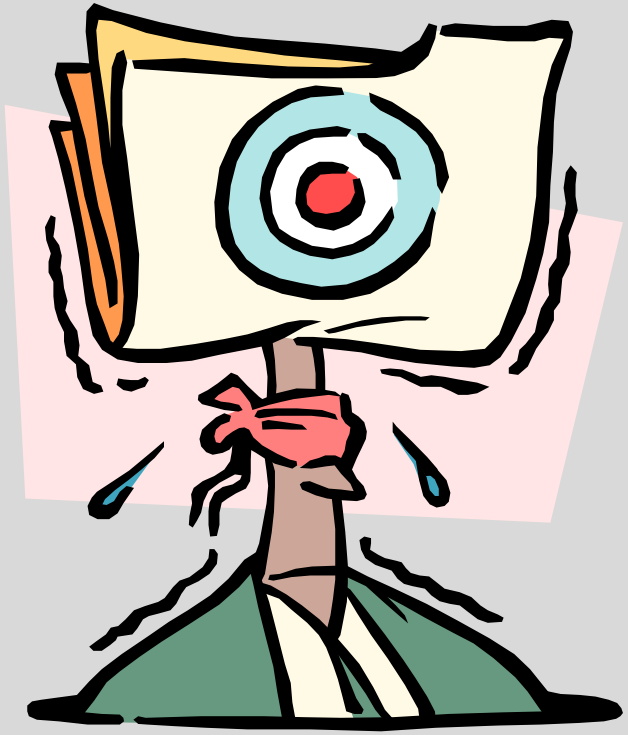
Adaptation

- Combat Team
- Tasks

Agility

- Each cell is a “joint” – Decision point

Thanks for your attention



It is better to hear rebuke of the wise….

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